CLAIMS

What is claimed is:

1. A water condensation system, comprising:

a water vapor retaining container;

a condenser located within the water vapor retaining container for containing a liquid at a lower temperature than the water vapor, such that condensate forms on the outside of the condenser when water vapor is present and lower temperature liquid is in the condenser; and

a collection trough under the condenser for gravitationally collecting the condensate which has sweated off the condenser.

2. The water condensation system of claim 1, wherein the water vapor retaining container is a passive solar system.

3. The water condensation system of claim 1, wherein the water vapor retaining container is airtight.

4. The water condensation system of claim 1, wherein the condenser is made of pipe.

5. The water condensation system of claim 4, wherein the condenser is made of a closed loop system of pipes.

6. The water condensation system of claim 4, wherein the condenser is made of a pipe material selected from the group consisting of copper and aluminum.

7. The water condensation system of claim 1, wherein the condenser is longitudinally oriented within an elongated water vapor retaining container.

8. The water condensation system of claim 1, wherein the container is an elongated container having dimensions of from about 6 inches to about 18 inches in height, and from about one (1) foot to about 20 acres in width and from about two feet to about 20 acres in length.

9. The water condensation system of claim 1, wherein the condenser carries a liquid selected from the group consisting of water, fresh water, salt water, refrigerant, and supercooled gases.

10. The water condensation system of claim 1, wherein the liquid in the condenser is at a temperature of less than about 45°F.

11. The water condensation system of claim 1, wherein the liquid in the container is at a temperature of greater than about 100°F.

12. The water condensation system of claim 1, wherein the collection trough is of a V-shaped configuration.

13. The water condensation system of claim 1, wherein the condensate being collected is water having less than about 500 ppm impurities.

14. A passive solar water condensation system for processing non-potable water into potable water by condensing purified water from contaminated water sources, comprising:

an elongated passive solar water vapor retaining dehumidification container to contain the non-potable water to be separated into potable water and residual sediment, said non-potable water to be put into a vapor phase by heating with solar energy;

at least one condenser pipe located within the water vapor retaining dehumidification container for receiving an incoming cold liquid at a lower temp rature than the water vapor, such that condensate forms on the outside of the condenser when water vapor is present and lower temperature liquid is in the condenser; and

a collection trough under the condenser for gravitationally collecting the condensate which has sweated off the condenser, forming purified water.

15. The condensation system of claim 14, further comprising a pre-treatment pond for pre-cleaning the non-potable water which is received by the humidification container to aid in the process of evaporation into the water vapor phase.

16. The condensation system of claim 14, further comprising a storage tank for storing the purified water collected from the dehumidification process.